

IN THE SPECIFICATION:

Please replace paragraph beginning on line 24, page 3 with the following replacement paragraph:

A1  
--The temperature control unit may include a programmable temperature range. The programmable temperature range may be operable to control the operation of the unit in the conditioned space by being selectively operable to utilize one of the first pre-programmed control mode and the second control mode. The method may include querying the end user to select numerical temperature values for the programmable temperature range. The temperature values may include a minimum temperature value and a maximum temperature value. The method may include selecting a priority for the programmable temperature range by the end user. The method may include selecting a unit control mode for the programmable temperature range. Selecting the unit control mode for the programmable temperature range may include selecting one of a cycle ~~sentry~~<sup>TM</sup> mode, a continuous mode and a ~~eyele-sentry/continuous~~ cycle/continuous select mode (cycle ~~sentry~~, continuous and ~~eyele-sentry/continuous~~ cycle/continuous select modes discussed in greater detail below). The unit control mode may be one of a cycle ~~sentry~~ mode, a continuous mode and a ~~eyele-sentry/continuous~~ cycle/continuous select mode.--

Please replace paragraph beginning on line 13, page 4 with the following replacement paragraph:

A2  
--The conditioned space may be a first conditioned space and the programmable temperature may be a first programmable temperature range. The transport may include a second conditioned space and the unit may include a second programmable temperature range. The second programmable temperature range may be operable to control the operation of the unit in the second conditioned space by being selectively operable to utilize one of the first pre-programmed control mode or the second control mode. The first programmable temperature range and the second programmable temperature range may both be operable to utilize the first pre-programmed control mode or the second control mode. The method may include the step of selecting a first unit control mode for the first programmable temperature range and a second unit control mode for the second programmable temperature range. Each of the first and second unit control modes may be one of a cycle ~~sentry~~ mode, a continuous mode or a ~~eyele-sentry/continuous~~ cycle/continuous select mode. The method may include the step of selecting a

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first priority for the first programmable temperature range and a second priority for the second programmable temperature range by the end user. The first priority and the second priority may be different priorities. The method may include the step of determining which of the first priority and the second priority is a higher priority. The method may include the step of operating the temperature control unit in the unit control mode corresponding to the temperature range with the highest priority.--

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Please replace paragraph beginning on line 20, page 6 with the following replacement paragraph:

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A3  
--Fig. 6 is a temperature control chart representing temperature control when the programmable temperature range is a frozen range and cycle ~~sentry~~ mode is selected by an end user as the unit control mode for the programmable temperature range.--

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Please replace paragraph beginning on line 23, page 6 with the following replacement paragraph:

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A4  
--Fig. 7 is a temperature control chart representing temperature control when the programmable temperature range is a fresh range and cycle ~~sentry~~ mode is selected by an end user as the unit control mode for the programmable temperature range.--

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Please replace paragraph beginning on line 21, page 8 with the following replacement paragraph:

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A5  
--The operations of the programmable temperature ranges are programmed or selected by the end user to include a unit control mode that operates the temperature control unit within the conditioned space. The unit control mode may be one of a cycle ~~sentry~~ mode, a continuous mode or a ~~cycle sentry/continuous~~ cycle/continuous select mode. The cycle ~~sentry~~ mode cycles the unit between on and off or null based on the temperature within each conditioned space. If the temperature within the conditioned space is acceptable, the unit will go to null (off) within the conditioned space until the temperature is no longer acceptable. When the temperature is no longer acceptable, the unit will turn on or restart within the conditioned space to bring the temperature back to an acceptable temperature. Some transport vehicles may include more than one conditioned space. If this is the case, the unit will not go to null until the temperatures

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within all the conditioned spaces are acceptable. If one conditioned space has an acceptable temperature and another conditioned space has an unacceptable temperature, the unit will continue to run and the conditioned space with the unacceptable temperature will continue to be cooled or heated until the temperature within the conditioned space is acceptable, however, the conditioned space with the acceptable temperature will not be cooled or heated while the unit continues to run. When one conditioned space has an acceptable temperature and another conditioned space has an unacceptable temperature, the conditioned space with the acceptable temperature is running null (the conditioned space with the acceptable temperature is null and the conditioned space with the unacceptable temperature is being heated or cooled). Running null occurs in cycle ~~sentry~~ mode when the transport vehicle has more than one conditioned space and one of the conditioned spaces require heating or cooling.--

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Please replace paragraph beginning on line 5, page 10 with the following replacement paragraph:

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--The ~~eyele-sentry/continuous~~ select mode is different from the cycle ~~sentry~~ mode and the continuous mode, in that, the ~~eyele-sentry/continuous~~ cycle/continuous select mode transfers the option of selecting either cycle ~~sentry~~ mode or continuous mode from the end user to a secondary user. The secondary user may be, but is not necessarily limited to, a transport vehicle operator, loading dock personnel, and a product handler (people who load and unload cargo into the transport vehicle). The cycle ~~sentry~~ mode and the continuous mode are programmed or selected by the end user when he/she is programming or selecting the operations of the programmable temperature range. For ~~eyele-sentry/continuous~~ cycle/continuous select mode, the end user programs or selects ~~eyele-sentry/continuous~~ cycle/continuous select mode while programming or selecting the operations of the programmable temperature range. The secondary user then selects between cycle ~~sentry~~ mode and continuous mode at a later time, after all the operations for the programmable temperature range have been selected, typically when the conditioned space is being prepared to transport cargo.--

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Please replace paragraph beginning on line 18, page 13 with the following replacement paragraph:

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--Referring to Fig. 1b, at block 34 the end user selects the priority of the temperature range (the remainder of the program is similar for both fresh and frozen temperature ranges, therefore, the term temperature range will be used rather than fresh temperature range and/or frozen temperature range). The priority of the temperature range prioritizes all of temperature ranges from most important, given the priority value of 1, to the least important, given the priority value equal to the number of temperature ranges programmed into the temperature control unit by the end user (largest priority value possible is 10 in the preferred embodiment). The end user may select one unit control mode (~~cycle sentry~~ mode, continuous mode, or ~~eyele sentry/continuous~~ cycle/continuous select mode) for each temperature range to control operation of the temperature control unit within each conditioned space (conditioned space indicated as CS in flow charts). The temperature control unit can only operate in a single mode, continuous or ~~cycle sentry~~, therefore, the temperature range with the highest priority (lowest priority value) will determine whether the temperature control unit operates in ~~cycle sentry~~ mode or continuous mode. The sensitivity of the cargo to changes in temperature and the importance of the cargo being transported within the conditioned space typically determine priority of the programmable temperature ranges.--

Please replace paragraph beginning on line 9, page 14 with the following replacement paragraph:

A6  
--The program then continues to block 50 where the program determines if the end user selects the temperature range to be ~~eyele-sentry/continuous~~ cycle/continuous select mode. The ~~eyele-sentry/continuous~~ cycle/continuous select mode gives the secondary user a choice to select between ~~cycle sentry~~ mode or continuous mode to control the operation of the temperature control unit within the conditioned space after the operations of the temperature range have been selected by an end user, rather than the end user selecting ~~cycle sentry~~ mode or continuous mode for the temperature range when selecting operations for the temperature range. If the end user selects ~~cycle sentry~~ mode or the continuous mode for the temperature range, the secondary user may not select between ~~cycle sentry~~ mode and continuous mode. If the unit control mode of the

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C0022 temperature range is ~~cycle sentry~~/continuous cycle/continuous select mode (YES at block 50), the program proceeds to block 54.--

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Please replace paragraph beginning on line 10, page 15 with the following replacement paragraph:

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--Referring back to block 54, if the program determines that the end user did not select economy mode for the temperature range (NO at block 54), the program proceeds to block 62 where the program determines if the end user has selected cycle ~~sentry~~ mode for the temperature range. Referring back to block 50, if the program determines that the end user did not select ~~cycle sentry~~/continuous cycle/continuous select mode for the temperature range (NO at block 50), the program proceeds to block 62 (similarly to NO at block 54). If the program determines that the end user selects cycle ~~sentry~~ mode for the temperature range (YES at block 62), the program proceeds to block 66 where the program determines if the end user has selected economy mode for the temperature range. If the program determines that the end user selects economy mode for the temperature range (YES at block 66), the program proceeds to block 70 where the temperature range operates with the pre-programmed general operations as discussed above. If the program determines that the end user did not select the economy mode for the temperature range (NO at block 66), the program proceeds to block 74.--

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Please replace paragraph beginning on line 5, page 16 with the following replacement paragraph:

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A10  
--If the program determines that the end user selects high speed pulldown for the temperature range (YES at block 74), the program proceeds to block 78 where the program determines if the end user selects fuel saver timer (FST) for the temperature range. The FST helps obtain greater fuel savings for the unit by utilizing a variable delay based on an eight minute timer. The variable delay delays the unit from resuming high speed operation in the conditioned space after the unit is in a null or off condition in that particular conditioned space. Instead of resuming high speed operation during the delay, the unit runs in low speed in the conditioned space. When the temperature in the conditioned space rises a predetermined amount above or below the thermal setpoint in cycle ~~sentry~~ mode or the temperature indicates a need for high speed in continuous mode (continuous mode will be discussed in greater detail below), the

unit will first run in low speed. The eight minute timer starts when the unit first runs in low speed and the temperature is monitored in the conditioned space. The temperature must fall or rise (depending on if the unit is cooling or heating the conditioned space) a predetermined amount before the eight minute timer times out or the unit will run in high speed if allowed. If the temperature in the conditioned space does fall or rise the predetermined amount before the timer times out, the eight minute timer resets and the unit continues to run in low speed. Running the unit in high speed consumes more fuel than if the unit is running in low speed, therefore, delaying the unit from going directly to high speed saves fuel and decreases fuel consumption of the unit. If the program determines that the end user selects FST for the temperature range (YES at block 78), the program proceeds to block 82. If the temperature range is a frozen temperature range, the FST is active when the temperature in the conditioned space is in region 3 of the temperature control chart illustrated in Fig. 6 (discussed in greater detail below). If the temperature range is a fresh temperature range, the FST is active when the temperature in the conditioned space is in regions 3 and 5 of the temperature control chart illustrated in Fig. 7 (discussed in greater detail below).--

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Please replace paragraph beginning on line 1, page 21 with the following replacement paragraph:

--Referring back to Fig. 1b and block 62, if the program determines that the end user did not select cycle ~~sen~~try mode for the temperature range (NO at block 62), the program proceeds to block 150 and the temperature range is in continuous mode. At block 150, the program determines if the end user selects economy mode for the temperature range. If the program determines that the end user selects economy mode for the temperature range (YES at block 150), the program proceeds to block 154 where the temperature range operates with the pre-programmed general operations.--

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Please replace paragraph beginning on line 9, page 30 with the following replacement paragraph:

--After block 366, the program proceeds to block 370 where the program selects the setpoint temperature range with the highest priority. As noted above, the priority of each temperature range is selected in the main routine of the program. The program selects between

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the stored first, second and third thermal setpoint temperature ranges. After block 370, the program continues to block 374 where the first, second and third conditioned spaces operate in cycle ~~sentry~~ mode or continuous mode (the ~~cycle-sentry/continuous~~ cycle/continuous select mode will eventually operate in cycle ~~sentry~~ mode or continuous mode depending on the mode that the secondary user selects) depending on the unit control mode selected for the temperature range with the highest priority. Each of the stored temperature ranges with lower priority than the temperature range with the highest priority maintain all of their operations (i.e. high speed pull down, SP1, FST, SP2, fan operations, door switch options, etc.) selected in the main routine of the program, except they operate in the unit control mode (cycle ~~sentry~~ or continuous) of the temperature range with the highest priority. All temperature ranges are operated in the same unit control mode because the temperature control unit (or in other words, the engine) can only operate in one mode, continuous mode or cycle ~~sentry~~ mode. For example, if the temperature range with the highest priority operates in the cycle ~~sentry~~ mode, the other two temperature ranges corresponding to the other two conditioned spaces will operate in cycle ~~sentry~~ mode even if they are set for continuous mode or ~~continuous/cycle-sentry~~ cycle/continuous select mode.--

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Please replace paragraph beginning on line 10, page 31 with the following replacement paragraph:

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A13

--Referring now to Figs. 4-9, the temperature control charts will be discussed. The temperature control charts illustrated in Figs. 4-9 are for comprehension purposes and for example purposes only and represent a sample of the many temperature control charts that are possible. For example, a diesel internal combustion engine system or an electric motor system may power the temperature control unit. Both types of powered units have different features and temperature control charts. Figs. 4 and 5 are examples of temperature control charts for electric powered units and Figs. 6-9 are examples of temperature control charts for diesel powered units. The temperature control charts indicate the operation of the unit within the conditioned space when the temperature in the conditioned space is at various temperatures. As noted above, a programmable temperature range is selected for each conditioned space within the transport vehicle. The unit is controlled within each conditioned space according to the operations selected in the main routine of the program. For example, if a programmable temperature range is a fresh range and is selected to operate in cycle ~~sentry~~ mode and economy mode, then the

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temperature control chart illustrated in Fig. 5 will indicate how the unit will be controlled within the conditioned space when the temperature in the conditioned space varies. The left side of the temperature control charts display a falling temperature scale where higher temperatures are at the top of the scale and lower temperatures are at the bottom of the scale (numerical temperature values not illustrated). The right side of the temperature control charts display a rising temperature scale where lower temperatures are at the bottom of the scale and higher temperatures are at the top of the scale. All the temperature control charts include a thermal setpoint (represented by a horizontal dashed line) and various regions that will be discussed individually with each temperature control chart. The various regions of the temperature control charts indicate what operation the unit will be performing when the temperature in the conditioned space is within a particular region. The divisions between the regions are temperatures that may be pre-programmed or selected by the end user.--

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Please replace paragraph beginning on line 12, page 32 with the following replacement paragraph:

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--Referring to Fig. 4, a temperature control chart is illustrated that represents temperature control when the programmable temperature range is a frozen range, is in economy mode, and is selected to operate in either cycle ~~entry~~ mode or continuous mode. The thermal setpoint is designated at point A. Region 2 is a control region in which the unit is on and is cooling the temperature within the conditioned space toward thermal setpoint A. In region 8 of the temperature control chart illustrated in Fig. 4, the unit may be null in the conditioned space because the temperature in the conditioned space is an acceptable value. The unit may also be cooling the conditioned space in region 8 for reasons known to those skilled in the art. When the temperature in the conditioned space is within region 7, the unit is heating the conditioned space toward thermal setpoint A. In the preferred embodiment of the present invention, point B is 10 °F below the thermal setpoint, point C is 1 °F below the thermal setpoint, and point D is 10 °F above the thermal setpoint, however, these points may be any temperature above or below the thermal setpoint and still be within the scope of the present invention. Points B and C are temperatures that divide regions 7 and 8. Point D, along with the thermal setpoint A divide regions 2 and 8. As noted above, economy mode has pre-programmed parameters that the end



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user may not change, therefore, points B, C and D are fixed and can not be varied by the end user.--

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Please replace paragraph beginning on line 5, page 33 with the following replacement paragraph:

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*A15*  
--Referring to Fig. 5, a temperature control chart is illustrated that represents temperature control when the programmable temperature range is a fresh range, is selected to operate in either cycle ~~entry~~ mode or continuous mode, and is in economy mode. Region 2 is a control region in which the unit is on and is cooling the temperature within the conditioned space toward thermal setpoint E. If the temperature in the conditioned space is in region 4, the unit may be null because the temperature within the conditioned space is at an acceptable temperature. The unit may also be heating the conditioned space in region 4 for reasons known to those skilled in the art. If the temperature in the conditioned space is in region 7, the unit is running or on and is heating the conditioned space toward thermal setpoint E. If the temperature in the conditioned space is in region 8, the unit may be null because the temperature within the conditioned space is an acceptable temperature. The unit may also be on or cooling the conditioned space in region 8 for reasons known to those skilled in the art. In the preferred embodiment of the present invention, point F is 3.5 °F below the thermal setpoint, point G is 1.7°F above the thermal setpoint, and point H is 8 °F above the thermal setpoint, however, these points may be any temperature above or below the thermal setpoint and still be within the scope of the present invention. Point F along with the thermal setpoint E divide regions 4 and 7. The thermal setpoint E and point G divide regions 4 and 8. The thermal setpoint E and point H divide regions 2 and 8. As noted above, economy mode has pre-programmed parameters that the end user may not change, therefore, points F, G and H are fixed according to the pre-programmed operations and can not be varied by the end user.--

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Please replace paragraph beginning on line 1, page 34 with the following replacement paragraph:

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*A16*  
--Referring to Fig. 6, a temperature control chart is illustrated that represents temperature control when the programmable temperature range is a frozen range and is selected to operate in cycle ~~entry~~ mode. If the temperature in the conditioned space is in region 1 of the temperature

control chart, the unit is running or on and is cooling the conditioned space in high speed. If the temperature is in region 3, the unit is on and is cooling the conditioned space. In region 3, the unit may be cooling the conditioned space in high speed or in low speed and the FST may be activated if selected for the programmable temperature range (see block 78 of Fig. 1c).

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Determination of whether the unit operates in high speed or low speed depends on what operations were selected by the end user for the programmable temperature range. If the end user selected the high speed pulldown operation (see block 74 of Fig. 1c) for the programmable temperature range then the unit will cool in high speed while the temperature in the conditioned space is in region 3. However, if the end user did not select the high speed pulldown operation for the programmable temperature range, the unit will cool the conditioned space in low speed while the temperature is in region 3. The point at which the unit may switch from high speed to low speed and that sets a barrier between region 1 and region 3 is SP1, which may be selected by the end user. In region 8 of the temperature control chart illustrated in Fig. 6, the unit may be null in the conditioned space because the temperature in the conditioned space is an acceptable temperature. The unit may also be cooling the conditioned space in region 8 for reasons known to those skilled in the art. When the temperature in the conditioned space is within region 7, the unit is heating the conditioned space toward thermal setpoint I. In the preferred embodiment of the present invention, SP1 is a variable temperature that may be selected by the end user, point J is 0.5 °F below the thermal setpoint I, point K is 5 °F below the thermal setpoint I, point NRT is a variable temperature that may be selected by the end user and determines at what temperature the unit will restart from null in the conditioned space, and point L is a variable temperature that may be selected by the end user and may determine at what temperature the unit switches from low speed cool to high speed cool, however, these points may be any temperature above or below the thermal setpoint and still be within the scope of the present invention. SP1 and point L are temperatures that divide regions 1 and 3. Points J and NRT are temperatures that divide regions 3 and 8. Point K, along with the thermal setpoint I divide regions 7 and 8.--

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Please replace paragraph beginning on line 8, page 35 with the following replacement paragraph:

*A17*

--Referring to Fig. 7, a temperature control chart is illustrated that represents temperature control when the programmable temperature range is a fresh range and is selected to operate in

cycle ~~entry~~ mode. If the temperature in the conditioned space is in region 1 of the temperature control chart, the unit is running or on and is cooling the conditioned space in high speed. If the temperature is in region 3, the unit is on and is cooling the conditioned space. In region 3, the unit may be cooling the conditioned space in high speed or in low speed and the FST may be activated if selected for the programmable temperature range (see block 78 of Fig. 1c).

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Determination of whether the unit operates in high speed or low speed in region 3 is similar to the reasons discussed above for the temperature control chart illustrated in Fig. 6. If the temperature in the conditioned space is in region 4, the unit may be null because the temperature within the conditioned space is at an acceptable temperature. The unit may also be heating the conditioned space in region 4 for reasons known to those skilled in the art. If the temperature is in region 5, the unit is on and is heating the conditioned space. In region 5, the unit may be heating the conditioned space in high speed or in low speed and the FST may be activated if selected for the programmable temperature range (see block 78 of Fig. 1c). Determination of whether the unit operates in high speed or low speed depends on what operations were selected by the end user for the programmable temperature range. If the end user selected the high speed pulldown operation (see block 74 of Fig. 1c) for the programmable temperature range, the unit will heat in high speed while the temperature in the conditioned space is in region 5. However, if the end user did not select the high speed pulldown operation for the programmable temperature range, the unit will heat the conditioned space in low speed while the temperature is in region 5. If the temperature of the conditioned space is in region 6, the unit will be heating the conditioned space in high speed toward the thermal set point M. If the temperature in the conditioned space is in region 8, the unit may be null in the conditioned space because the temperature may be an acceptable temperature. The unit may also be cooling the conditioned space in region 8 for reasons known to those skilled in the art. In the preferred embodiment of the present invention, SP1' is a variable temperature that may be selected by the end user and determines at what temperature the unit will switch from high speed cool to low speed cool, point N is 3.5 °F below the thermal setpoint M, point O is 7 °F below the thermal setpoint M, point P is 3.5 °F below the thermal setpoint M, point Q is 1.7 °F above the thermal setpoint M, point NRT' is a variable temperature that may be selected by the end user and determines at what temperature the unit will restart in the conditioned space., and point R is a variable temperature that may be selected by the end user and may determine at what temperature the unit switches from low speed cool to

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high speed cool, however, these points may be any temperature above or below the thermal setpoint and still be within the scope of the present invention. SP1 and point R are temperatures that divide regions 1 and 3. The thermal setpoint M and point NRT' are temperatures that divide regions 3 and 8. The thermal setpoint M and point Q are temperatures that divide regions 4 and 8. Points N and the thermal setpoint M are temperatures that divide regions 4 and 5. Point O and point P are temperatures that divide regions 5 and 6.--

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